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Commission on Sustainable Development acting as the preparatory committee for the World Summit on Sustainable Development
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Item 2 of the provisional agenda*
Comprehensive review and assessment of progress achieved in the implementation of Agenda 21 and the other outcomes of the United Nations Conference on Environment and Development, as well as of the Programme for the further Implementation of Agenda 21

Letter dated 25 January 2002 from the Chargé d'affaires of the United Kingdom of Great Britain and Northern Ireland to the United Nations addressed to the Secretary-General

Upon the instructions of my Government, I have the honour to transmit to you a document summarizing the conclusions of a workshop on strategies for addressing the linkages between technology and sustainable development at the World Summit on Sustainable Development, which was held by the Royal Institute of International Affairs in London on 17 and 18 January 2002 (see annex).

I should be grateful if you could circulate the present letter and its annex as a document of the second session of the Commission on Sustainable Development acting as the preparatory committee for the Summit.

(*Signed*) Alistair **Harrison**
Chargé d'affaires

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Annex to the letter dated 25 January 2002 from the Chargé d'affaires of the United Kingdom of Great Britain and Northern Ireland addressed to the Secretary-General

THE ROYAL INSTITUTE OF INTERNATIONAL AFFAIRS | Energy and Environment Programme

High-level workshop on strategies for addressing the linkages between technology and sustainable development at the World Summit for Sustainable Development (WSSD) in Johannesburg 2002

Funded by the UK Department of Trade and Industry

Royal Institute of International Affairs, Chatham House, 10 St-James's Square, London SW1
17th and 18th January 2002

SUMMARY OF WORKSHOP CONCLUSIONS

Technology has a crucial role to play in the overall economic development of developing countries, and in their strategies for eliminating poverty, conserving natural resources and protecting the environment. Countries with strong technological capabilities are also best placed to benefit from globalisation. Enabling developing countries to manage their technological development has the potential to help address many of the challenges of sustainable development, and should therefore be a central focus of WSSD.

In the past technology transfer policy has tended to be narrowly focused on the acquisition of equipment. This approach needs to be significantly broadened to include policy approaches that will improve developing country stakeholders' **capabilities to access, apply and adapt knowledge**. The key challenge is to develop the human resources of developing countries to enable them to contribute to, and benefit from, technological development.

Many different kinds of technology can contribute to sustainable development. Some of these may be designed specifically to tackle environmental or poverty related problems (e.g. solar photovoltaics, or hand pumps for fresh water). However, other technologies that have not been designed to directly address these issues (e.g. computers and mobile phones) may have an equally important role to play.

The technologies needed for sustainable development will differ from country to country, and between different localities within countries. Actors in developing countries themselves are best placed to identify their technology needs, and to develop new technologies or to adapt existing technologies to meet these needs. However they will only be able to do so if there is

a supportive and enabling environment: if they have a well developed skills base; strong, well-targeted programmes of research and development; an entrepreneurial private sector and if financing is available to the companies that are developing and utilising the technologies.

Countries which are successful at technological development combine all of these factors together to create **dynamic innovation systems**, which link a wide range of actors from both the public and private sectors. At WSSD the international community should commit to actions that will assist developing countries in developing their own innovation systems. Such systems should include the following elements:

A process of assessing needs Technological development per se will not necessarily meet the needs of the poor, or ensure the conservation of natural resources. In order to ensure that technological innovation systems meet the real needs of developing countries, technology development strategies should be based on a bottom-up process of assessing needs. Such processes should be dynamic and ongoing, as needs change over time, and should involve a wide range of stakeholders, including the poor themselves.

Investment in well targeted R&D R&D has a crucial role to play in technological development, and in economic development as a whole. Investment in R&D has a higher pay-off than any other type of spending in terms of its impact on economic development. There are currently enormous differences between the percentage of GDP that is invested in R&D by countries in the North and South.

R&D capacity needs to be built in developing countries for the following reasons:

- To help assess technology needs
- To help identify potential indigenous technologies, and to enable their development
- To imitate or adapt existing technologies from other countries

In order to contribute to sustainable development, R&D needs to be guided by real needs (which can be identified through needs assessments – see above) and should have strong links to the private sector and to the public sector and to groups working to alleviate poverty.

Training and education programmes geared to technological development Wide reaching training and education programmes are needed if countries are to develop technologically. These programmes should include:

- Basic education
- Managerial training, with an emphasis on developing entrepreneurial skills
- Higher education in technology related disciplines (e.g. applied sciences)

Training and education programmes should be designed to integrate strongly with all other aspects of a country's technological innovation strategy.

Information provision Many initiatives already exist to provide technological data to developing countries. However, current approaches to information provision tend to be

"supply led". Information provision should be designed to meet the needs of developing countries, both in terms of the nature of the information and the medium in which it is made available. Such needs can be identified through country-led needs assessments (see above) and communicated to information providers. Strategies for ensuring that information is provided through as many channels as possible should be developed in-country, in order to provide access to technology information to as many people as possible, specifically by engaging active brokers and formal and informal 'human' networks as well as through using the more common information technology channels.

Taxation, regulation and incentives Governments should implement fiscal and regulatory policies that encourage innovation, and provide where possible direct incentives to companies that develop or disseminate technologies that contribute to sustainable development. Fiscal incentives can also be used to encourage businesses and households to purchase such technologies.

Finance Private sector finance has the potential to play a central role in enabling developing countries to invest in technologies for sustainable development. However, innovative

financing strategies are needed to overcome barriers to private sector investment in countries or technologies that are perceived as risky. Strategies that utilise public finance to leverage private investment should be incorporated into developing countries' technology innovation systems.

Small scale enterprise has a key role to play in developing and disseminating technology, and in sustainable development more generally. Smaller businesses often have difficulty in obtaining finance in developing countries, as they are too large to benefit from the services that are provided by microfinance institutions, or are too small to qualify for project financing, and may be perceived as too risky to obtain commercial finance. Strategies for providing funding to small scale enterprise need to be developed, either through "bundling" projects, or through supporting the development of intermediary organisations that can act as a link between small scale enterprise and large private and public sector finance providers. Capacity building for the management of small scale enterprise should also be a priority.

Institutions for managing and "joining up" innovation Given the need to take a systemic approach to technology innovation for sustainable development, and the need to involve a wide range of actors in the development and implementation of innovation strategies, institutional frameworks have a crucial role to play in technological development. Institutions can provide the "glue" between all of the elements of an innovation system, and can provide the following functions:

- Awareness raising, information provision and influencing demand from consumers
- Assessing needs and consulting stakeholders
- Linking R&D and business
- Building partnerships and aggregating projects or demand
- Assessing the impact of policy and making recommendations for policy changes
- Networking internationally

- Supporting the development of new technologies (e.g. through helping to find finance, or through providing finance themselves)

Recommended actions for WSSD:

General: All commitments made on technology issues at WSSD should have the objective of helping developing countries to develop their own capacity to develop, adapt and diffuse technology.

Developing Countries should consider:

- committing to developing integrated strategies for technological innovation, including the elements listed above, with a strong emphasis on meeting the needs of the poor and on conserving natural resources and reducing pollution.
- committing to setting up dedicated institutions for developing and implementing these strategies (with the help of donors), or to giving this role to existing institutions, and developing them accordingly.
- integrating such strategies into wider Poverty Reduction Strategies and/or National Strategies for Sustainable Development.
- using monies made available by the HIPC initiative to support the implementation of technology development programmes, as well as for more immediate poverty reduction programmes.

Developing countries and international organisations should consider:

- committing to an OECD strategy for increasing support for developing country R&D into technologies and processes that can contribute to sustainable development. Such R&D should have a strong link to bottom-up technology needs assessment processes (see above).
- committing to providing sustained support for those developing countries which commit to developing integrated strategies for technological innovation for sustainable development (see above).
- providing increased funding and better targeting existing funding for technology projects that contribute to sustainable development, with a focus on small scale projects that meet local needs, and on leveraging private finance.
- fostering new international centres of excellence in research into technology for sustainable development.